

DIG IT!

The Secrets of Soil



Intermediate

DIG IT! You & Soils



Did you **sleep** on soil last night?

Yes you did. About one-third of the planet Earth is covered with soil. We build our homes, schools, stores and restaurants on soils. We also use lumber from trees grown in soil and bricks baked from soils to build our homes! We build landfills, ponds and septic systems in soils.



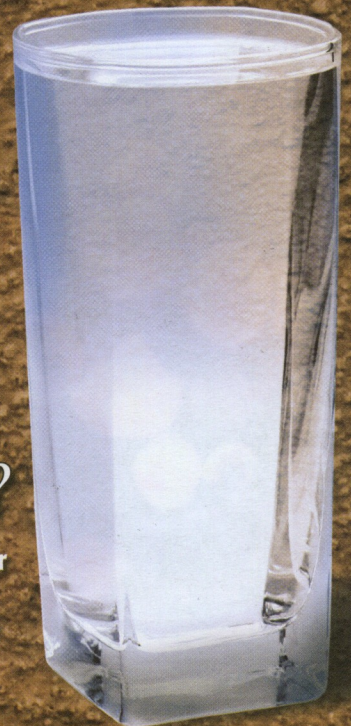
Have you **worn** any soil lately?

Maybe. And that doesn't mean you need to take a bath! A lot of our clothes like jeans, tee shirts, socks and underwear have cotton in them. Cotton is grown in soils. Or maybe you have a coat made from wool. Wool comes from sheep, and sheep eat grass that grows in soil. Do you have a leather belt or leather shoes or boots? Leather comes from the cattle that eat the grass that grows in the soils!



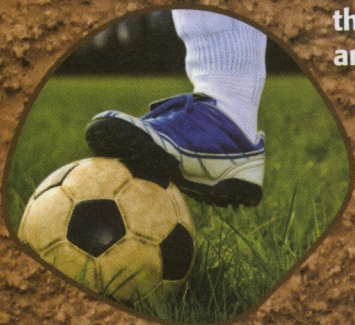
Have you **eaten** any soil today?

Well...yes...kind of...you have. Cereals, vegetables and fruits are grown in soils. Plants get minerals and nutrients from soils. We get the minerals and nutrients we need to stay healthy from plants. Almost everything we eat is raised either in soils, like potatoes, or on soils, like beef. Cows eat hay and grass grown in soils.



Did you **drink** any soil today?

If you haven't, you are probably pretty thirsty right now. All water comes in contact with soil at one time or another. It may flow through soils, under soils or float on top of soils. Soils help filter and clean the water people and animals drink.



Did you **play** with any soil today?

The fields, forests and playgrounds around your home all come from soils too. The wildlife living in these ecosystems need soils just as much as you do!

WHAT'S SOIL GOT TO DO WITH IT?



Start with an item on the left. Draw a line tracing it back to its beginning in the soil on the right. One example has been done for you.

(3 products will have 4 connections and 2 will only have 3 connections)



DIG IT! AND PLANT IT

It takes a loooooooooong time to make SOIL. Sometimes, it takes hundreds of years. One way we lose soil is by erosion. When rain or running water hits bare GROUND soil erosion can happen. Every rain drop that hits bare ground scatters tiny specks of soil. The loose soil is washed away into creeks, streams and rivers. During one rainy season a whole INCH of soil can be washed away. Remember, it takes a loooooooooooooooooong time to make more soil! Hundreds of years!

One way to stop soil erosion is to PLANT trees or grasses. The roots help HOLD soil in place when it rains. Branches and leaves slow down the rain as it falls on the ground. Leaves that have fallen off the tree help protect the soil.

Use the underlined words to fill in the blanks. Then find the mystery words in the puzzle!



1. Plant roots help _____ soil in place.
2. It takes a long time to make _____.
3. Bare _____ leads to soil erosion.
4. During one season an _____ of soil can be lost.
5. _____ trees and grass to stop soil erosion.



1

2

3

4

5

!

The Secrets of Soil

(Write the mystery words on the line above.)

Dig Up Some Soil Secrets

Since you have discovered that you sleep on soils, eat soils, wear soils and play on soils, aren't you glad we have them? Now it's time to find out some ways soils depend on us to take care of them every day. It is also important to think about things that we do that may harm soils. Soils can take hundreds of years to form so they are very hard to replace. Because we use soils every day, it is important to take care of them.



1| ____



2| ____

If the photo is showing something good for the soil put a G in the space.
If the photo is showing something bad for the soil put a B in the space.



3| ____



4| ____



5| ____



6| ____



7| ____

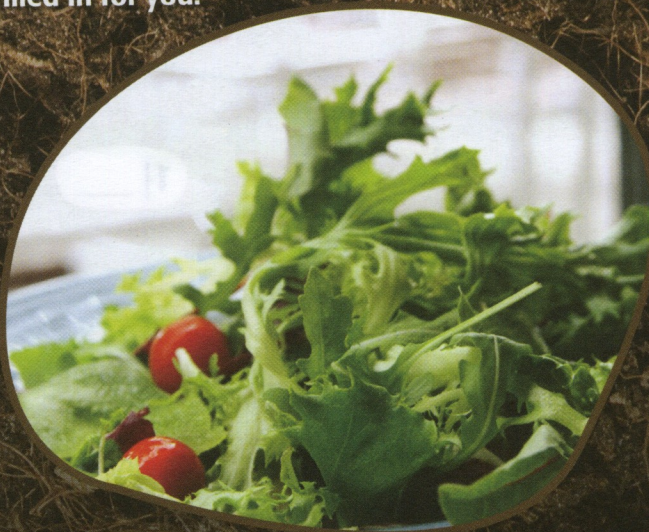


Soils Take Care Of Us

Fill in the blanks to name each picture. The first letter is filled in for you.

F _____

Almost all of the food we eat is grown in or raised on soil. For example, hamburgers come from cows that eat grass and hay grown in soils. Fruits and vegetables that we eat are grown in soil.



F _____

Flowers and all other kinds of plants make the oxygen in the air we breathe. Flowers, plants and trees grow in soils!



S _____

A lot of the clothes we wear are made from cotton. Cotton grows in soils.



We Need To Take Care Of Soils!

It would be hard to live for even one day without soils. Think about what a day would be like if we didn't have any soil on Earth.

Write six things you use every day that come from soils.

1. _____
 2. _____
 3. _____
 4. _____
 5. _____
 6. _____

Draw a picture of your favorite thing that comes from soils.



from trees and other plants keep the soil in place.
 away. Which keeps soil in place after it rains? Rocks and roots
 worked away and mixing with the water. This is soil eroding.
 the rain water that or runoff? It is a muddy, red or brown
 the water in the river and ponds or even along roads. Is
 A lake a lake when you are outside after it rains? Look in

Q: What is soil erosion?

Ask Maxine

Food scraps worms - Give your dinner scraps to some hungry worms
 and you can make some soil yourself. Worms can eat their own weight in
 your leftover food scraps each day! They use these food scraps to make
 compost, which is great to add to soil. Ask an adult to help you start
 composting with worms or investigate other ways to compost.
 Composting is easy and a great way to improve soil.

I don't bag it - don't take a bag of the stuff if you are just buying one or two things.
 Better bring your own reusable paper bags or made from trees and plastic
 or plants that naturally grow in your area. Lay down logs to stop erosion
 on a piece of the earth - Keep the litter picked up
 outdoors or playground and add it. Keep the litter picked up



WHAT ARE SOME OF YOUR IDEAS FOR
TAKING GOOD CARE OF YOUR SOIL?

DIG DEEPER

SECRETS FOR SAVING YOUR SOIL

We need to do a better job of taking care of our soils. Soils can take hundreds of years to form so we need to take good care of the soils we have. What can you do?

- **Adopt a piece of the Earth** – pick a little piece of ground in your yard, neighborhood or playground and adopt it. Keep the litter picked up. Grow “native plants” – or plants that naturally grow in your area. Lay down logs to stop erosion.
- **Don't bag it** – don't take a bag at the store if you are just buying one or two things. Even better, bring your own reusable bags! Paper bags are made from trees and plastic bags are made from oil, both are natural resources. Trees are renewable and oil is not renewable. When both are taken from the Earth, the soil is disturbed and can be polluted.
- **Feed some worms** – give your dinner scraps to some hungry worms and you can make some soil yourself! Worms can eat their own weight in your leftover food scraps each day! They use these food scraps to make compost, which is great to add to soil. Ask an adult to help you start composting with worms or investigate other ways to compost! Composting is easy and a great way to improve soils.

Ask Maxine

Q: What is soil erosion?

A: Take a look when you are outside after it rains. Look at the water in the rivers and ponds or even along roads. Is the rain water clear or muddy? If it is muddy, soil is being washed away and mixing with the water. This is soil eroding away. What keeps soil in place after it rains? Rocks and roots from trees and other plants keep the soil in place.

Maxine is a 47-year employee of NACD.



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National Association
of Conservation Districts (NACD)
<http://nacdn.org>



Soil Science Society of America
<http://soils.org>



Smithsonian Institution
<http://forces.si.edu/soils>

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Correlations to national standards, educators guide and answer key at <http://nacdn.org/education>
Booklet designed for use with grades 2-3.

Dig It and Plant It Answer: Dig It!
1-G; 2-G; 3-G; 4-B; 5-B; 6-B; 7-G